

Claims 1-22 were rejected under 35 U.S.C. 103 over Franck and Hardy in view of Front after the Examiner withdrew his earlier rejection of these claims over Burdette in view of Franck.

As already analyzed and discussed in detail by applicant, Franck relates to brain surgery by using cameras attached to so-called "bone anchors" (Abstract). The Examiner seems to be of the opinion that Franck discloses "a real time seed position determining means" but applicant fails to agree with the Examiner and requests the Examiner to make it clear, pursuant to the requirement for completeness of examiner's action according to 37 C.F.R. 1.104, where the Examiner finds in the specification such a disclosure. Applicant notes that Franck makes mention of placement of brachytherapy seeds, but only in connection with some unspecified insertion tube that would be couple to drive mechanism 1110 of Franck in place of the surgical instruments that are the main focus of Franck.

The "seed-position determining means" appearing in claim 1 of the present application is characterized as being for determining the position of deposited seeds in a patient's body with reference to a space-fixed coordinate system. With reference to the Figure in the application, the position detector 25 affixed in space (page 4, lines 28-29) may be said to represent this seed-position determining means. Franck does not disclose any such means. Indeed, had any seeds been placed in a patient's body, while the camera could detect an insertion needle, it could not detect such seeds in a patient's body. Moreover, there is no teaching or suggestion of referencing what the camera of Franck does track i.e., a surgical instrument, to a fixed space coordinate system. While the patient is said to be free to move relative to this camera array 560 (column 7, lines 25-26), this does not imply that the camera array 560 is space-fixed or adapted to detect the seeds with reference to a space-fixed coordinate system. Indeed, nowhere does Franck say that the camera array 560 is space-fixed or capable of detecting anything with reference to a space-fixed coordinate system. Instead, Fig. 33 shows cameras 1720 of this camera array 560 as being individually affixed to a corresponding one of bone anchors 1700 affixed to the patient's skull, and the patient's skull is by no means intended to be immobile with reference to a space-fixed coordinate system. In other words, the patient is free to move relative to the cameras 1700 only before the surgery is started. Once the surgery is commenced, "the patient is essentially fixed relative to

the cameras" (column 27, lines 40-42). This means that the patient and the cameras 1700 move together. Nowhere, however, is it said that they are stationary with reference to a space-fixed coordinate system.

Hardy was cited evidently for disclosing a three-dimensional simulation and computerized numerical optimization system. The Examiner correctly characterized this reference as failing to disclose a detector at a fixed position with respect to a fixed space coordinate system.

Front was cited evidently for disclosing, among other elements, a detector at a fixed position with respect to a fixed space coordinate system. In Front, there is no teaching of determining the position of seeds. Front adds nothing to Franck in this regard as Front tracks the position of device 520 shown therein, similar to Franck's tracking of surgical instruments. Neither reference teaches or suggests, for example, tracking of seeds in a patient's body as claimed. Applicant again argues in response that there is no suggestion in any of the cited references to combine the teachings of these three references, and that the three references relate to different kinds of medical treatment and hence that an ordinary person skilled in the art would not be motivated to combine the teachings of these references. In addition, no combination of these references would result in the present invention, as any combination would have to be further modified to teach, for example, tracking of seeds in a patient's body.

As already discussed in an earlier submitted Amendment, furthermore, a stereotactic surgical procedure can be performed on different parts of a body, and the human body includes many parts which are so different in character that different procedures must be employed by doctors trained in different branches of medical science. In view of the great number of differently characterized body parts and the great number of treatment techniques, applicant argues that it is not appropriate to combine references relating to different body parts and different treatment techniques. In other words, applicant submits that the Examiner has improperly combined the references based upon the hindsight gained by the present invention.

Franck relates to tracking an instrument during stereotactic image guided brain surgery by means of cameras fastened to the patient's bones for obtaining anatomical data

with reference to a body-fixed coordinate system. This being the invention, there is no reason to support the Examiner's argument that Franck would have been motivated to borrow any "detector at a fixed position with respect to a fixed space coordinate system" allegedly disclosed by Front. Besides, a camera array affixed to bone anchors is one of essential elements of Franck. Replacing it with Front's detector would be contrary to the teaching of Franck. Likewise, Hardy does not mention or even hint at any advantage to be gained by incorporating the teaching of Front, nor is there any suggestion that Hardy's simulation techniques and computerized optimization might be advantageously combined with a stereotactic image guided brain surgery system of Franck. Moreover, Franck does not disclose or even hint at tracking of the position of any seeds. Thus, the combination of Hardy and Franck would require further modification to result in the present invention.

In summary, applicant believes that the new references cited by the Examiner do not provide any teaching to make up for the deficiencies in the references relied upon earlier by the Examiner. There is no teaching or suggestion to combine the references in the manner in which they have been combined, and even as combined they do not result in the present invention. Applicant submits therefore that the application is allowable. Such action by the Examiner is earnestly solicited.

Respectfully submitted,



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